The GRIP Process

Inventory, Targets, Scenario, Strategy

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The Greenhouse Gas Regional Inventory Protocol (GRIP)

Developed at the University of Manchester with funds from the Tyndall Centre and the Environment Agency.

NATURAL ENVIRONMENT RESEARCH COUNCIL Top Ten Outputs (2008)

RTPI mediation of space · making of place Research Excellence with Impact (2007)

RESEARCH COUNCILS UK Award for Outstanding Performance in Development Plans (2008)

Covenant of Mayors Committed to local sustainable energy Recommended approach by the EU's Covenant of Mayors

The Greenhouse Gas Regional Inventory Protocol (GRIP)

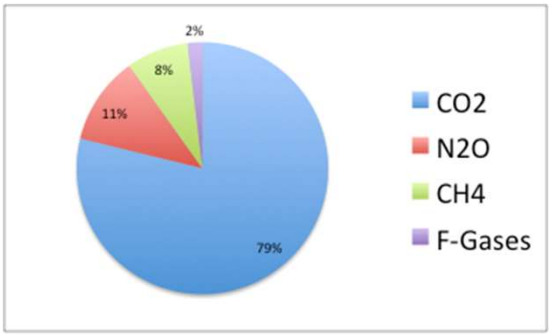
A stakeholder-oriented approach focused on mutual learning, consisting of 3 stages:

1. Set up a regional greenhouse gas inventory (or several)
2. Develop 'Energy Scenarios'
3. Use the scenario outputs to inform plans

An Emissions Inventory

The Kyoto Protocol covers a basket of 6 greenhouse gases:

- Carbon dioxide (CO2)
- Methane (CH4)
- Nitrous Oxide (N2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PGCs)
- Sulfur Hexafluoride (SF6)



An Emissions Inventory

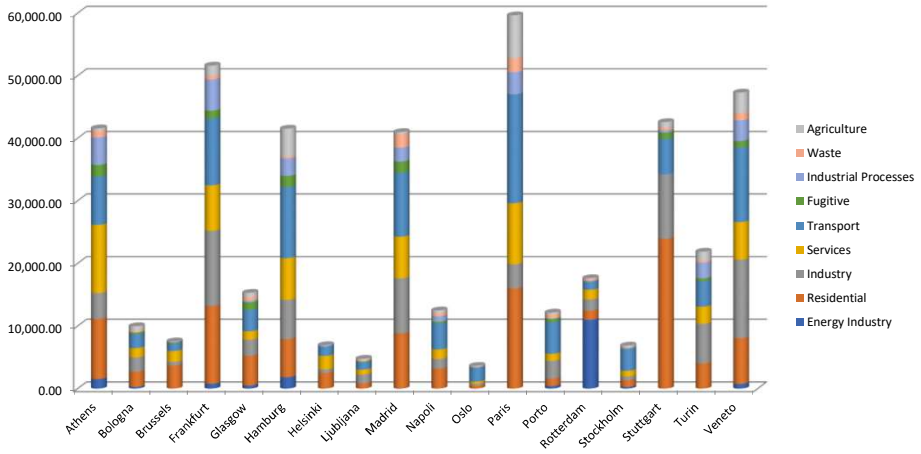
- Energy - (CO_2, CH_4, N_2O)
  - Energy combustion, extraction, distribution, transformation
- Industrial Processes (CO_2, CH_4, N_2O, HFC, PFC, SF_6)
  - Non combustion chemical reactions, leakage.
- Waste - (CO_2, CH_4, N_2O)
  - Landfill, waste water, composting, incineration
- Agriculture - (CH_4, N_2O)
  - Animals, fertiliser application, animal wastes

How Do We Measure/ Estimate Charlotte's Emissions?

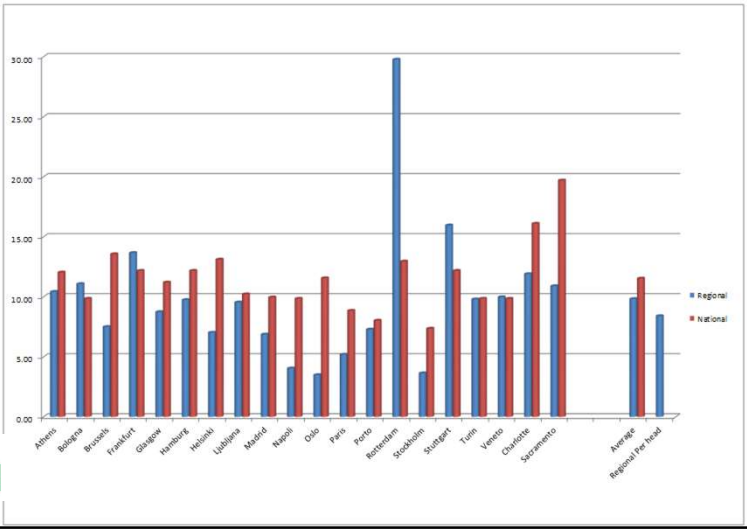
Methods to measure regional emissions will depend on:

- The frequency and type of activities in the region
- How the emissions are allocated (e.g. production or consumption approach)
- Availability/ reliability of data

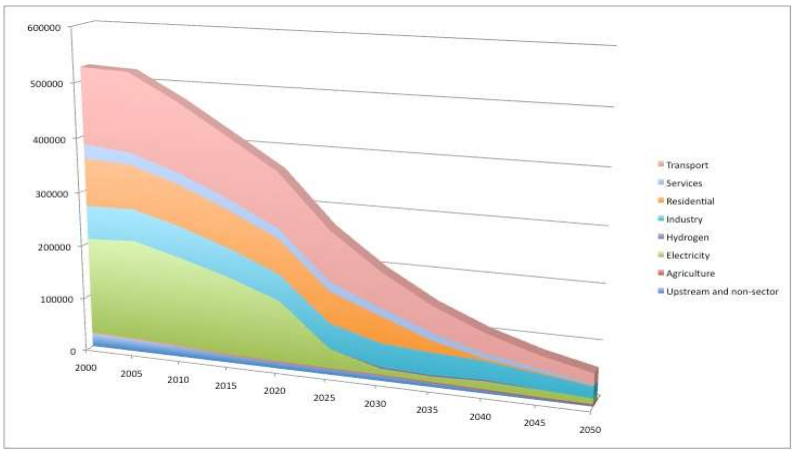
Frequency of Activities in Region (Emissions by Sector & Sub-Sector, 2005)



Frequency of Activities in Region (Emissions by Sector & Sub-Sector, 2005 (2015 - Charlotte)



Targets Differ by Sector: UK



Stage 2: How do we get there? The Scenario Sessions

- Plausible scenario for 80% reduction by 2050
- 8 - 10 participants per session
- 4 days in each region
- Translation and observers
- Video record (with permission of participants)
- Chatham House Rule

How do we reduce CO_2 emissions from energy?

- There are three potential solutions.
  - Reduce the energy we consume
  - Change the fuels we use
  - Change the technologies we use to generate electricity
- Clumsy solutions for a complex world

Reduce the energy we consume

Change the fuels we use

Change the technologies we use to generate electricity

Sharing Ideas

Swedes divided over bunny biofuel

By Helena Merriman
BBC News

Residents in Stockholm are divided over reports that rabbits are being used to make biofuel.

Bodies of thousands of rabbits are reportedly fuelling a heating plant

The bodies of thousands of rabbits are fuelling a heating plant in central Sweden, local newspapers say.

The city of Stockholm has an annual cull of thousands of rabbits to protect the capital's parks and green spaces.

The rabbits, not native to Sweden, are mainly the offspring of pets released by owners, and are said to be destroying parks in the capital.